

## Fisherman's Participation in Assessing Level of Sustainable Livelihood in Surabaya Coastal City , Indonesia

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### Abstract

Multidimensional poverty closely related to social, economy and environmental vulnerabilities remain happen in fisherman society, especially in Surabaya coastal city, in the middle of the magnificence of Surabaya city as the second biggest city in Indonesia as well as the center of industry, commercial and marine. A comprehensive approach is essentially required to identify the multidimensional poverty. Sustainable Livelihood Approach (SLA) is an approach used to reduce poverty and fisherman vulnerability by emphasizing more on strategic sectors to support sustainable livelihood. SLA is closely related to participatory poverty assessment/ PPA method. This research aims to enhance Surabaya fishermen's participation in assessing and understanding the influence of sustainable livelihood achievement. The data of this research were collected through deep interview with stakeholder, Focus Group Discussion and direct observation. The result of this research showed that the level of sustainable livelihood of fisherman society in Surabaya was imbalanced or unsustainable. It was described in asset pentagon diagram. People achieved 80% of physical assets like facilities and infrastructures, however, people's ability in accessing sources or other sectors like social, human and natural/environmental as well as finance assets were only under 50%. Therefore, every policy of development directly linked to people in Surabaya city coastal, must be based on sustainable principals oriented to society through participatory approach.

**Key words :** Multidimensional poverty, fisherman society, sustainable livelihood approach (SLA), participatory poverty assessment (PPA).

### 1. Introduction

Poverty is a condition of material and social deprivation that causes an individual lives under feasible life, or a condition in which an individual undergoes relative deprivation compared to other individual in a society (Hall et al, 2004). Poverty, nowadays, becomes a complex and multidimensional problem, since it is measured from not only income level, but also vulnerability and insecurity, in which poor people are more socially, economically and environmentally vulnerable (Kulindwa et al, 2008). According to Sanderson (2000), there is a large number of poor people in the city who live in the damaged land, it is vulnerable to flood and landslide, as well as in the crowded area that is vulnerable to fire and natural disaster. Vulnerability of poor people, in a social-ecological system is blipped by the impact of climate change, rapidness of people growth and economy growth enhancement (Adger, 2006).

Multidimensional poverty and its relation to social vulnerability remain happen in fisherman community (Neiland and Bene, 2004), especially in fisherman or production-unit household level. This level is the smallest unit or level in a fisherman community system as the part of household population in coastal area. Fisherman household is often known as those who live in crowded condition, with limited access to social services, low level of education, and do not have skill as well as main asset, especially land (Adrianto, 2007). Such conditions cause fisherman community is vulnerable to the attack of social, political and economic changes, as well as the fishermen's inability to counter capitalist intervention, the presence of stakeholder. Therefore, ultimately, poverty always becomes a trade mark to fishermen community (Razali, 2004).

Some pressures that increase the number of poor people in coastal city area are: people growth in coastal area, development of coastal and sea tourism sectors, changes and varieties of climate as well as regulation of government infrastructure, suburbanization in coastal area that causes two types of pressure: first is 'direct' pressure that happens in living environment as the result of development in coastal area, second is continuing pressure as the result of development in city area like domestic and waste industry (Smith and Doherty, 2006).

From some problems happen in coastal city that have been described related to fisherman poverty as well as some pressures, researchers suggest that an effective effort is required in managing, allocating and using the resources in coastal area sustainably and preservatively to decrease poverty and vulnerabilities of fisherman community.

Ahmed (2009) in his research, uses Sustainable Livelihood Approach (SLA) in developing fishery sector in Bangladesh. The result shows that fishermen can reach sustainable livelihood through enhancing access of some assets of living. Ali (2001), in his research related to optimalizing sustainable livelihood approach concept in

solving poverty in city area of Africa also shows that the dynamical process of social, economical and environmental changes, that always happens in the city area, becomes a possibility yet it tends to create threat in accessing some living assets. Optimizing of sustainable livelihood approach can be used as basic principal to encourage fishermen in establishing sustainable livelihood strategy (Ali, 2001).

Basically, sustainable livelihood approach (SLA) is a main approach in development program, aiming at reducing fishermen poverty and vulnerabilities (Neiland and Bene, 2004). In practice, SLA in fishery sector more emphasizes on some strategic sectors that support fishermen's life, such as formal and informal institutions that influence their livelihood as a fisherman, resources management, social and economical heterogeneity of fisherman household as well as some significant aspects that can be taken into account to solve poverty in coastal area. SLA can help fisherman household or coastal society in determining priority or needs to support their life, so that they are able to manage resources effectively without damage its sustainability (Allison and Horemans, 2006). Sustainable livelihood can be achieved when people decide their choice to access possibility and resources as well as uncover the possibility to the others and future generation in accessing them (Norton and Foster, 2001).

Moreover, sustainable livelihood approach, in practice, is closely related to participatory poverty assessments (PPA) method. PPA has been developed as an instrument which includes poor people's perspective in poverty analysis as well as strategic formulation to solve poverty (Saragih et al, 2007). Furthermore, Saragih et al say that through PPA, priority of poor community problems and their strategies in running their life as well as their efforts to get rid of poverty can be identified.

Like the problem of resources managing in coastal areas in Indonesia, Surabaya also has complex problems in coastal areas (Bappeko Surabaya, 2011). Surabaya that is known as the center of industrial, commercial and marine area, has important role in some parts of East Indonesia (Prihandrijanti and Firdayati, 2011) and becomes the center of orientation in East Java. Surabaya develops rapidly in terms of physical and social-economical contexts and gives some impacts to the coastal environment and fisherman community life. Fishermen in Surabaya are those who live in concerning prosperity level with slummy residence (*Dinas Pertanian* Surabaya, 2012). Therefore, this research aims at assessing sustainable livelihood level in coastal area of Surabaya through participatory poverty assessments (PPA) method.

The result of this research can be used to decide policy in reducing poverty in coastal area of Surabaya.

## 1. Materials and Method

### 2.1. Study Site

In selecting location of this research, the researchers used criterion based selection method in which location is selected based on certain criteria so that certain occasions are really selected to complete the information (Kanto, 2003). This research was conducted in east coastal area of Surabaya (Pamurbaya) which is the main area of fisherman residence development with great potential of resources such as mangrove, embankment, poultry and eco-tourism facilities (Nugrahanti and Navastara, 2012).

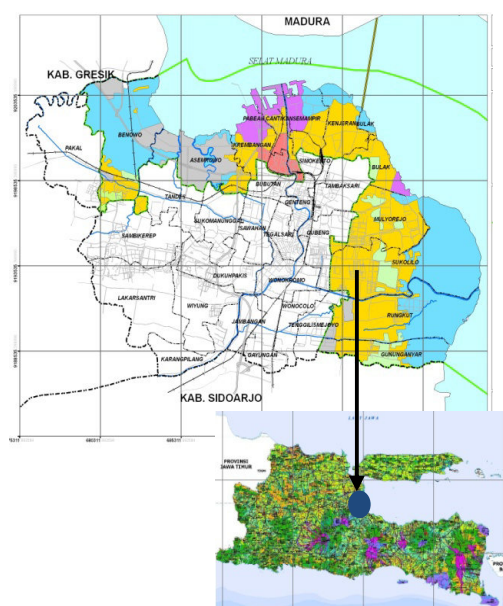


Figure 1. Coastal Area of Surabaya  
(Source: Bappeko Surabaya 2011)

## 2.2. Research Method

Population of this research were 624 fishermen's households live in Pamurbaya area in Bulak Subdistrict, 142 households live in Mulyorejo, 50 households live in Sukolilo, 45 households live in Rungkut, 17 households in Gunung Anyar and 228 households in Kenjeran (*Dinas Pertanian*, Surabaya, 2012). Number of sample was determined by purposive sampling method.

Research method used in this research was Participatory Poverty Assessment (PPA). PPA emphasizes the significance of commitment in involving poor people to analyze poverty and make strategic formulation of poverty alleviation (Norton, et al, 2001).

Data collection was conducted by using some techniques such as in-depth interview to the key informant consists of fisherman household, socialite and government. (Focus Group Discussion/ FGD) was conducted to explore information, agreement and similar perception in the community or society level. In addition, observation was done to obtain phenomena data, event or occasion undergone by poor households in the research location.

Analysis method used in this research was descriptive analysis that positioned fisherman as respondent and main informant. The data collected were analyzed by using statistics descriptive so that it produced frequency scores from each item. Frequency scores were presented in the form of percentage.

## 2. Results and Discussion

### 3.1. Indicator of Sustainable Livelihood

There are five assets influence people's life in the society, developed into main indicators in SLA approach, they are: human asset, natural asset, social asset, physical asset and financial asset (Allison, et al, 2006).

Life assets or resources are significant factors that should be properly revealed and understood since every resource has different characteristic and support power for every individual and society (BAPPENAS, 2012). Every resource/asset interrelates to other resources. Policy and effective development program note and map properly which resource/asset should be supported. A mistake often happens in fisherman community, especially in coastal area of Surabaya is a program which tends to be exploitative toward certain resource and lack of attention to the other resource development as an alternative.

The following are the results of fishermen's abilities in coastal area of Surabaya in accessing resource/asset as the main indicator in sustainable livelihood.

#### 3.1.1. Human Asset

Indicators of human asset that are categorized important elements to support sustainable livelihood are productive age-people that have completed their studies (Senior High School and College) and fisherman's involvement in training activities. The results of analysis are 22% of them did not access school, 27% of them graduated from Elementary School, 14% of them graduated from Junior High School, 26% of them graduated from Senior High School, 11% of them graduated from university/college. In other words, there are only 37% of fishermen in Pamurbaya coastal area who completed secondary school and 63% did not. In addition, only 27% of fishermen who participated in training activity, at least one kind of trainings related to entrepreneurship or exploring coastal resources.

The research result shows that only 32% of people who are able to access well human asset. In other words, not less than 68% of fisherman households who are not able to access human asset. Such conditions cause workers cannot access more feasible job.

#### 3.1.2. Social Asset

Indicators of social asset that are categorized important elements to support sustainable livelihood are cultural and institutional aspects, as well as people's participation in the organization. In the fisherman residence area in Wonorejo village, there is a society organization which actively take role in developing eco-tourism, while in the other areas there is no such conventional/ formal organization from fisherman society in terms of economical, social and environmental aspects. There are some entrepreneur groups of fisherman yet they have not been optimized. From all respondents, 90% of them think that both formal and informal institutions/organizations have not contributed optimally to fisherman society. Research result shows that people's access towards institutional aspect is remain under 10%.

Furthermore, in social asset study, related to culture, from the result of identification, there is only one cultural event that has been held hereditarily since fisherman's ancestors era in Sukolilo village that is called '*Galang Perahu*'. This event is usually held at Thursday night before fishermen do their duties to seek and catch fish in the sea. This event is preceded by cleaning boat and dirt in the beach. In the other areas, there is no such cultural event that becomes main characteristics of society culture in coastal area of Surabaya. Therefore, such cultural event that is followed by only 5% of coastal society, especially fishermen in Sukolilo, should be revitalized so that beach conversion can be supported in participatory. From the research result, fisherman households that access social asset supporting some other livelihood activities are approximately 35% and only 20% who

actively participate in both social and economical organizations closely related to fisherman's activity.

#### 3.1.3. Natural/ Environment Asset

Main indicator that is used to measure sustainable livelihood related to natural asset is people's access to ownership status and land capacity, supply of mangrove, and people's ability in accessing and preserving environment as well. The lack of land and non-fisherman land ownership status cause fishermen in coastal area of Surabaya live with insecure condition and vulnerable to natural disaster and they are afraid of controlling unregulated residence step in coastal area.

There are approximately 32% of fishermen who have land ownership status and the others remain do not have fixed land to live in. Moreover, there are 37% of fishermen who live in area which is vulnerable to natural disaster.

Related to natural/environment assets in coastal area of Surabaya, the large of mangrove is 625 Ha. The largest forest located in Keputih village, Sukolilo subdistrict. It is 130 Ha and the smallest is 5 ha, located in Bulak village, Bulak subdistrict.

However, the damage of mangrove is caused by land conversion by opening mangrove for luxurious residence, tourism, levee, beach and embankment development. In addition, pollution of industrial and household wastes from downstream as well as plastic waste to the coastal area that increase every year distracts mangrove vegetation growth. This causes natural imbalance in coastal area. 75% of fisherman households see that there has been environment degradation in coastal area during the last ten years. This causes beach abrasion. Moreover, more than 77% of people never do natural conversion especially mangrove preservation. In developing eco-tourism especially in the fisherman residence area in Medokan Ayu, Wonorejo and Gunung Anyar embank, fishermen do some activities to support eco-tourism, such as drying fish, managing fishing crops and mangrove. It was found in the fisherman residence in Kejawan Putih Tambak and Keputih that there is no significant activity related to nature, while in Kalisari, the fishermen only drying fish crops in their residence area.

#### 3.1.4. Infrastructure/Physical Asset

Physical asset is related to people's access towards facilities and infrastructure that support fisherman's life, such as: the availability of residence infrastructure service that includes utility availabilities like electrical service, waste management, sanitation and drainage, road network, clean water service, as well as communication services. Basically, the needs of all areas that become research locations are well accomplished with well condition. However, it still needs some reparation and enhancement. 85% of them have accessed infrastructure in the city. Furthermore, the availability of residence service and facilities in each area shows that those areas have been well completed with residence infrastructure (75%), like education, health, worshiping area and green open area facilities. However, there is no service of such facilities. This is not too problematic since those facilities can be accessed easily around fisherman residence area.

#### 3.1.5. Financial Asset

Indicator of financial asset used to measure sustainable livelihood are household income, comparison of income and expenditure, savings and fisherman's opportunity to get additional asset like soft loan. Household income under UMK (Labor Minimum Wage) is 62% while those whose income is above UMK are 38%. Most fisherman's expenditure for monthly consumption is about 600.001-1.200.000 rupiahs with percentage 46% from all samples and the others are above it. This is also caused by number of family members. The larger number of family members, the larger expenditure for consumption. There are only 25% of fisherman households that save their money more than 2.500.000 rupiahs in the bank. The others, about 15%, have soft loan like people business credit (KUR) in the bank, 22 % in the cooperation, and 31% loan from moneylender with relative big interest. Therefore, the research result shows that only 47% of coastal people who are able to achieve financial asset.

#### 3.2. Sustainable Livelihood Level in Coastal Area of Surabaya

Sustainable livelihood level can be described through pentagon. Pentagon can be used to perform the difference of people's access. Center point of pentagon in which all lines meet, shows access zero (0) towards assets, while outside border shows maximum access towards assets. Therefore, pentagon with different shape can be performed to the society and used by social groups in the society (Saragih et al 2007).

Research result of fisherman household in the coastal area of Surabaya, especially in the east coastal area, Pamurbaya, shows that achievement of livelihood asset is imbalanced or fisherman household access towards five assets in SLA is not optimal yet. For detail explanation, the result of sustainable livelihood assessment in the coastal area of Surabaya can be seen in figure 3.

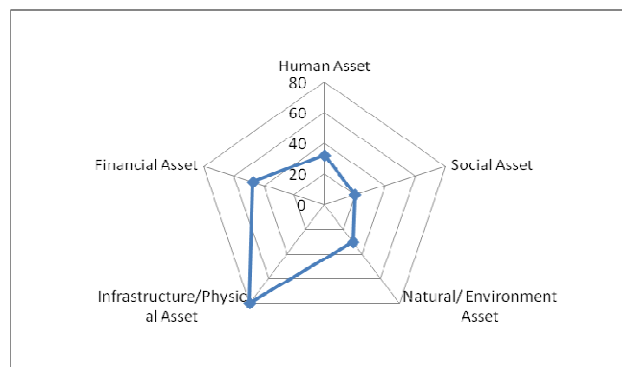


Figure 3. Sustainable Livelihood Level in Coastal Area of Surabaya

### 3. Conclusion

From research results, it can be concluded that in fact, fishermen in coastal area of Surabaya have not been able to achieve sustainable livelihood. Most of fishermen are only able to access physical assets optimally, yet it is not supported by ability in accessing or achieving other four sustainable livelihood assets. This shows that city area infrastructure development in coastal area without taking into account other people's needs may cause imbalance in people's life and thus it may cause vulnerability and insecurity.

Mangrove degradation and people who less understand the environmental aspects may lead into the bad condition of environment and natural disaster. Furthermore, the lack of human resources and land ownership influence people's ability in obtaining financial asset support. The lack of social aspect support like cultural events and social institutions lead into worse condition in achieving sustainable livelihood of fishermen in Surabaya.

### 4. Suggestion

These following are some important things that should be persisted and endured as the following up from the analysis results of SLA in coastal area of Surabaya with participatory approach:

- Encouraging people in determining their life achievement by realizing their own potential
- Surabaya government should pay attention to people's needs in sustainable livelihood achievement through development of assets establishment in balanced and continually
- Enhancing people's awareness of environment and natural resources conservation in coastal area of Surabaya
- Establishment policies related directly to the society in coastal area of Surabaya should be persistently based on sustainable establishment principal oriented to the society through the enhancement of participatory establishment plan, since one of indicators that shows sustainable livelihood has been successfully realized is a condition in which there is a negotiation process directly towards society about many things related to people's life and needs.

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